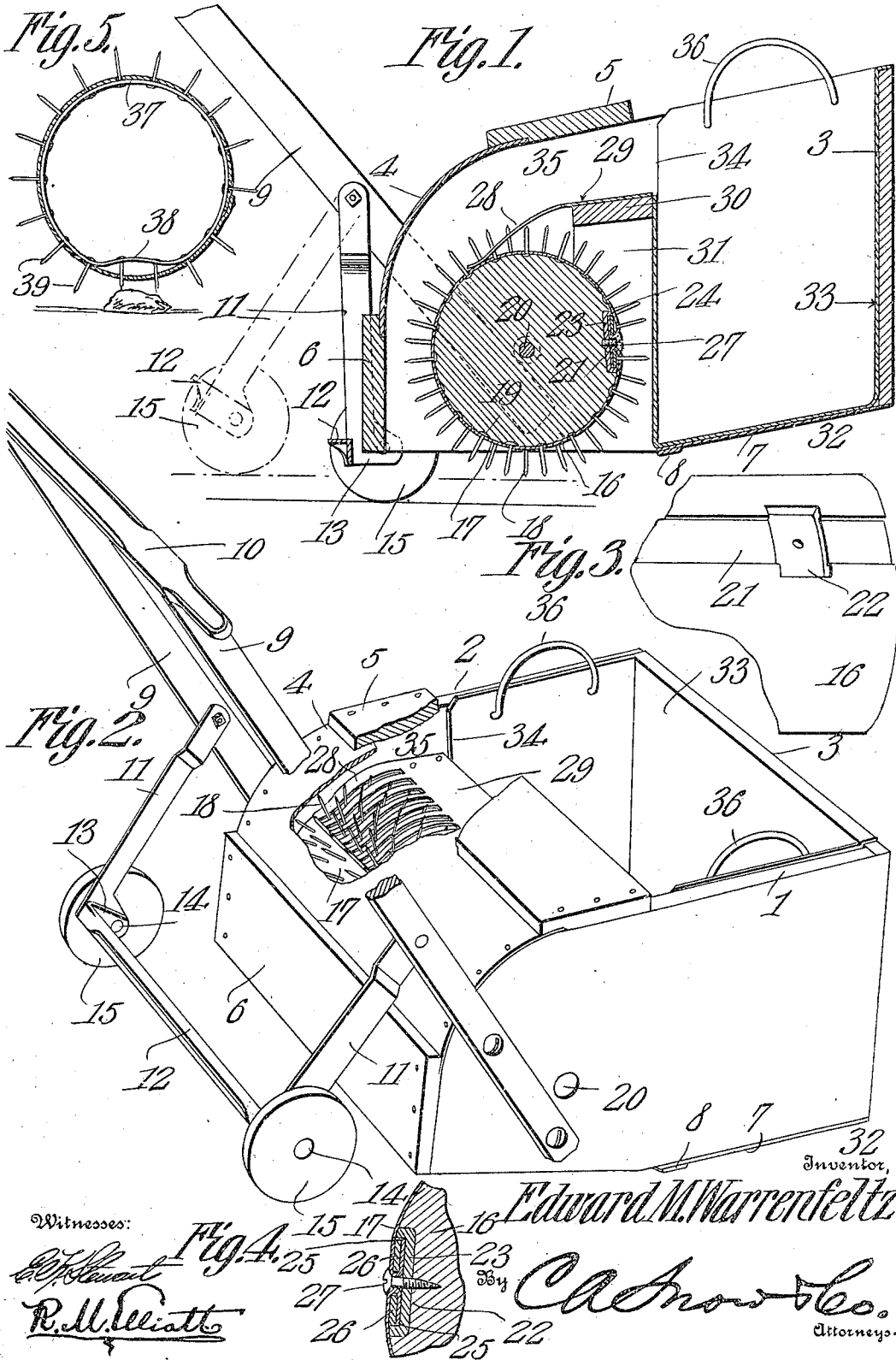


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 ROTARY RAKE.
 APPLICATION FILED NOV. 17, 1908.

949,104.

Patented Feb. 15, 1910.



Witnesses:

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Fig. 4.

Fig. 4.

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ROTARY RAKE.

949,104.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed November 17, 1908. Serial No. 463,092.

To all whom it may concern:

Be it known that I, EDWARD M. WARRENFELTZ, a citizen of the United States, residing at Lydia, in the county of Washington and State of Maryland, have invented a new and useful Rotary Rake, of which the following is a specification.

This invention relates to leaf-gathering machines.

The object of the invention is to provide a machine of this character which will rapidly and efficiently gather fallen leaves and deposit them in a receptacle that is readily detached from the machine for the purpose of being emptied. Furthermore, to provide a machine of the above character that shall be simple of construction, easy to operate, cheap to maintain in working order, and in which the parts are so constructed and assembled as to present the maximum wear resisting qualities.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a leaf-gathering machine, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts:—Figure 1 is a view in vertical longitudinal section through a machine constructed in accordance with the present invention. Fig. 2 is a view in perspective of the machine, a portion of the body portion being broken away to expose interior parts. Figs. 3 and 4 are detail views of a part of the picking cylinder. Fig. 5 is a transverse sectional view through a modified form of gathering cylinder.

The frame or body of the machine may be made wholly of metal, or partly of metal and of wood, the latter being shown in this instance, and which consists of two wooden side walls 1 and 2, a front wooden end wall 3, a rear end wall consisting of a curved metallic section 4 and two wooden sections 5 and 6, and a bottom wall 7 that is of less length than the side walls in order to permit proper operation of the gathering mechanism, and has its rear end reinforced by a lip 8. All of the above parts may be assembled in any preferred manner, as by nails or screws. The form of the frame or body herein shown will be found to answer all practical purposes, but may be changed

in various particulars without departing from the spirit of the invention.

The side walls have secured to them two levers 9 connected by a cross or push bar 10 by which the machine may be propelled over the ground, or be tilted to meet various requirements that arise in the operation of the device. Loosely depending from the levers are two arms 11, the lower ends of which are connected by a bar 12, preferably of angle iron, the terminals of which are bent at right angles to the length of the bar to form angular extensions 13 that are firmly bolted or riveted to the lower ends of the arms. These extensions, as well as the arms, support journals 14, upon which are mounted wheels or rollers 15, the function of which is to cause the rear end of the body to tilt upward, should the machine be drawn backward, and thus prevent the discharge of any leaves, grass, or the like that may have been gathered and deposited within the body. These rollers also serve to render easy the pulling of the machine over the ground in moving it to or from the place of use, and as they swing by gravity they will always assume a position to elevate the rear end of the body when the latter is tilted upward, thus to hold the teeth of the gathering cylinder, now to be described, out of contact with the ground. It will be understood that the bar 12 may be engaged by the foot of the person operating the machine when the bar and its related parts are in the position illustrated in dotted line in Fig. 1 of the drawings and in full line in Fig. 2 of the drawings, and that after such engagement pressure in a forward direction may be exerted against the bar whereby to move it and its related parts to the position shown in full lines in Fig. 1 of the drawings, the handle bar 10 being of course firmly gripped and preferably pulled in a rearward direction whereby to elevate the body of the machine.

The gathering cylinder may be constructed of any suitable material, and in this instance is shown as composed of a wooden core or center 16 and a metallic shield or sheath 17, through which projects the leaf-gathering teeth or pickers 18. These latter may be made in any preferred shape and are sharply pointed, in order to impale the leaves and are held in position by heads that are confined between the sheath and the core. If preferred, the heads may be sol-

dered, riveted or threaded to the sheath, and as this will be readily understood, detailed illustration of any obvious modification along these lines is omitted. As will be obvious, the pickers might be driven into the core thereby eliminating the sheath, but the latter will generally be employed, as it may be readily removed should it be necessary to repair damaged pickers or replace those that have become worthless by new ones.

The cylinder rotates in suitable bearings 20 journaled in the side walls, and these bearings may be of any type that will be found best adapted for use in connection with the machine. To hold the longitudinal edges of the sheath assembled for ready disconnection when required, the core is provided with a lengthwise channel 21 and adjacent to each end with a short transverse channel 22, the latter channels being disposed to intersect the channel 21, and have arranged therein clips 23 provided with upturned terminals 24. The opposed edges of the sheath are underturned, forming thereby keepers 25, in which are arranged flat metallic bars 26 which, together with the keepers, engage the channel, the edges of the bars being disposed against the terminals 24 of the clips. In order to hold the above parts in position, screws 27 are employed, the heads of which span the gap between the opposed edges of the sheath and bear thereon, and thus operate to force the bars 26 laterally and into engagement with the terminals 24 of the clips, thus firmly to lock the parts in the channel, the screws being passed through the clips and seated in the core.

The pickers are circumferentially and evenly spaced apart, and between each two rows is disposed one of a series of resilient stripping fingers 28 that project from a plate 29 secured to a cross bar 30 attached at its ends to the side walls and supported by uprights or cleats 31 also secured to the side walls. These stripping fingers, which may be either integral with the plate or attached thereto, are downwardly curved so as to lie close to the sheath and thus effect the positive removal of the leaves and the like carried by the pickers. As will be seen by reference to Fig. 1, the space between the inner face of the section 4 and the points of the pickers is somewhat constricted, and this will operate to prevent leaves and the like from working out of the casing and back to the ground.

The forward portion 32 of the lower edges of the side walls are upwardly inclined, in order to maintain the bottom wall 7 a sufficient distance above the ground during the operation of the machine, to permit the leaves to pass thereunder and thus be caught by the pickers.

Arranged within the forward portion of

the body and resting upon the bottom wall 7 is a receptacle 33, preferably of metal, the rear wall of which is cut away at 34 to permit passage of leaves and the like from the pickers through the throat 35, formed by the rear wall members 4 and 5 and the plate 29, to the receptacle, the latter being fitted with handles 36 by which it may be lifted from the body and relieved of its contents.

Where the machine is used on ground that is practically free from stones or rocks, the pickers may be relatively rigid, as shown in Fig. 1, but in some localities where the ground is stony, there might be danger of the pickers becoming broken if rigid, by contacting with stones or other hard objects. To obviate this, the form of cylinder shown in Fig. 5 may be employed, in which means is provided to permit the pickers independently of each other, or in groups to yield, should the cylinder pass over some unyielding object. The result is obtained by making the cylinder 37 hollow, and arranging therein resilient bands 38, preferably of steel, to which the pickers 39 are secured in any stable and practical manner, and project through the cylinder in the same manner as in the form of the invention shown in Fig. 1. By this arrangement it will be obvious that should the pickers contact with an unyielding object, such as stone or the like, they will yield in the manner shown, and thus prevent injury.

In the use of the apparatus, the rear end of the body is depressed to the position shown in Fig. 1, thereby causing the rollers 15 to assume the position shown by dotted lines in Fig. 1. This movement will throw the bottom wall upward a sufficient distance to permit leaves to pass thereunder and to be impaled by the pickers. As the machine is pushed forward, the leaves and the like are impaled, and carried upward where they are separated by the stripping fingers and are caused to pass through the throat 35 into the receptacle 33, and as soon as the latter is filled, it is removed, emptied and then replaced. During the forward movement of the machine, the rollers 15 pass lightly over the ground and perform no function whatever, but should rearward movement be imparted to the machine, the rollers will instantly assume the position shown in full lines in Fig. 1, thereby lifting the rear portion of the body and moving the pickers above the ground, whereupon the cylinder becomes inoperative and will not rotate, so that any leaves contained in the throat and rear portion of the body, will not be withdrawn and discharged to the ground. So long as the rollers are in contact with the ground the gathering cylinder is inoperative, and the apparatus may be drawn over the ground to any point desired.

In the event of the destruction as by break-

age or the like of one or more of the pickers 18, it will only be necessary to loosen the screws 27, withdraw the opposed edges of the sheath from the channel, and then remove the sheath in order to replace the pickers. To effect this, it is to be understood that the cylinder will be removed from the machine. The cylinder is traction driven, and by the elimination of the gears for effecting its rotation, the machine is materially simplified, and its cost of production reduced to the minimum. The elimination of gears to drive the cylinder also materially decreases the power necessary to operate the apparatus. In addition to the function of stripping or removing the impaled leaves or the like from the pickers, the fingers 28, together with the plate 29, serve to direct the detached leaves into the receptacle 33.

20 I claim:—

1. In a machine of the class described, a

frame, a gathering cylinder mounted for rotation in the frame, a receptacle adapted to receive from said cylinder, standards pivotally supported from the frame, wheels carried by the standards, and a transverse foot bar connecting the standards and adapted for engagement whereby the standards may be swung to position to support the machine.

2. In a machine of the class described, a gathering cylinder of hollow construction, resilient bands arranged therein, and picker teeth carried by the bands and projecting through the shell of the cylinder.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD M. WARRENFELTZ.

Witnesses:

EDWARD OSWALD,
JAMES HAMMOND.